

## LA-UR-21-21978

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Title: Porting E3SM from LANL's Open to Classified Computing Networks

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Intended for: Report

Issued: 2021-02-26

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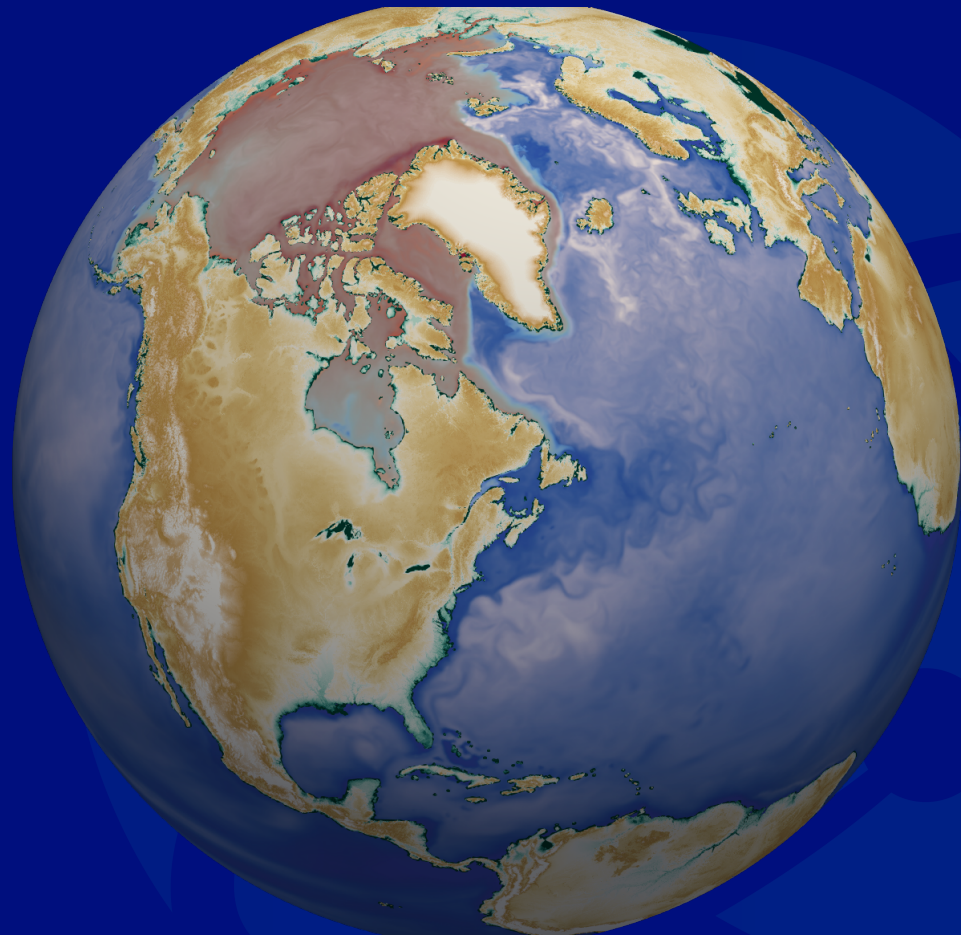
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# Porting E3SM from LANL's Open to Classified Computing Networks

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February, 2021

LAUR: XXX-XXXXX



# Overall Project Achievements

- update & expand E3SM library support on *Grizzly*, *Fog*, and *Sage*
- successfully ported and applied new, high / variable resolution E3SM configuration on *Sage* (Arctic Regionally Refined Mesh)
- order-of-magnitude increase over previous effort:
  - 375 yrs of simulation, 16.5 M cpu hrs used, 53 Tb of model output
  - utilize 85% of *Sage* for peak throughput of 5 SYPD
- update ocean and sea ice model analysis
- add support for atmosphere and land model analysis
- add support for general use of Paraview on HALO (*Sage*) and HAL
- publish select analysis products to C2S



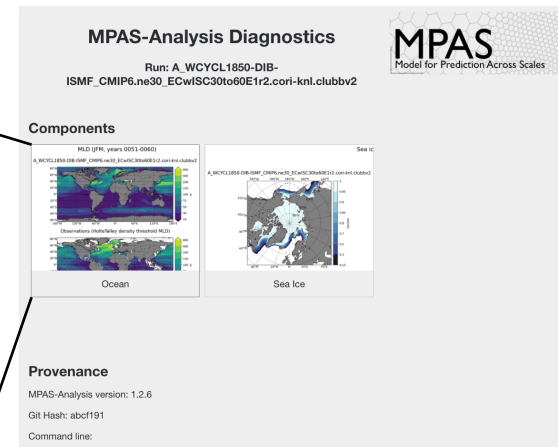
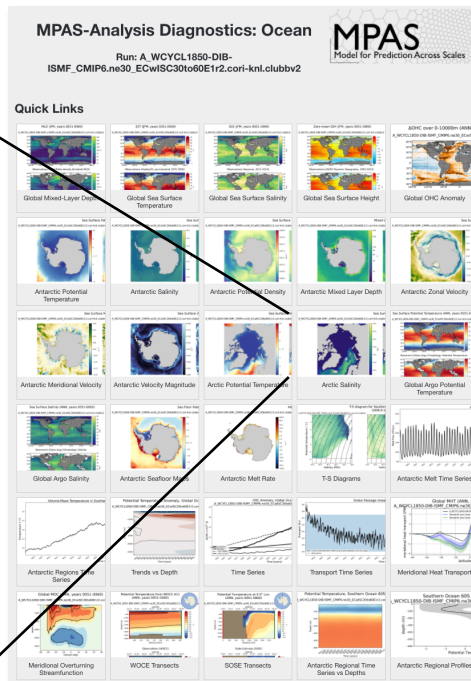
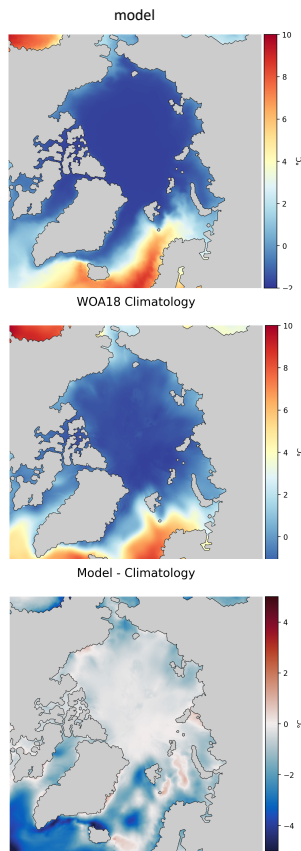
# Achievements Under “w20\_e3sm2sage” IC Allocation

- update & expand E3SM library support on turquoise and yellow
- update E3SM source code, input and analysis data on turquoise and yellow
- test new, high-, variable-resolution E3SM configuration on *Grizzly* (Arctic Regionally Refined Mesh)
- update and test ocean and sea ice model analysis on turquoise and yellow
- add support for atmosphere and land model analysis on turquoise and yellow
- test all simulation and analysis capabilities on *Grizzly* to insure robust port to restricted and classified computing platforms (*Fog* and *Sage*)
- use *Grizzly* simulation output to define Paraview state files used for visualizing *Sage* simulation outputs (published to C2S along with other select analysis)



# Ocean & Sea Ice Analysis

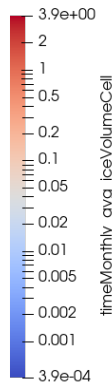
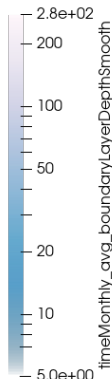
## Sea Surface Temperature





# Paraview Visualization of *Grizzly* Simulation Output

low-resolution (60-to-30km res. ocean & sea ice)



ARRM (60-to-10km res. Ocean & sea ice)

